



FILED

09/03/21
04:59 PM

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking Regarding
Broadband Infrastructure Deployment and to
Support Service Providers in the State of
California.

Rulemaking 20-09-001

**COMMENTS OF THE COUNTY OF SANTA CLARA
ON ASSIGNED COMMISSIONER RULING**

COUNTY OF SANTA CLARA

DIGITAL EQUITY CONSORTIUM

Imre Kabai, Chief Information Officer, County of Santa Clara Technology Services and
Solutions Department (Chair)

Martha Wapenski, Deputy County Executive, County of Santa Clara

Mary Ann Dewan, Superintendent of Schools, Santa Clara County Office of Education

Jill Bourne, Director of Libraries, City of San José

Robert Menicocci, Director, County of Santa Clara Social Services Agency

Rene Santiago, Deputy County Executive & Director, Santa Clara Valley Health and Hospital
System

Michael Hwa, Chief Medical Information Officer, County of Santa Clara Health System

Harry Freitas, Director, County of Santa Clara Roads and Airports Department

James R. Williams, County Counsel

Jerett T. Yan, Deputy County Counsel

Office of the County Counsel

70 W. Hedding Street, 9th Floor

San José, CA 95110

Telephone: (408) 299-5900

Facsimile: (408) 292-7240

E-mail: jerett.yan@cco.sccgov.org

Imre Kabai, Chief Information Officer,
County of Santa Clara Technology Services
and Solutions Department

150 W. Tasman Drive

San Jose, CA, 95134

Telephone: (408) 918-7127

Email: imre.kabai@isd.sccgov.org

September 3, 2021

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking Regarding
Broadband Infrastructure Deployment and to
Support Service Providers in the State of
California.

Rulemaking 20-09-001

**COMMENTS OF THE COUNTY OF SANTA CLARA
ON ASSIGNED COMMISSIONER RULING**

I. Introduction

The County of Santa Clara Digital Equity Consortium, on behalf of the County of Santa Clara (“County”), respectfully submits the following comments on the Assigned Commissioner Ruling (“Ruling”), filed on August 6, 2021, as part of the California Public Utilities Commission’s (“Commission’s”) Order Instituting Rulemaking Regarding Broadband Infrastructure Deployment and to Support Service Providers in the State of California. The County appreciates the opportunity to provide comments on the Ruling and strongly supports efforts from the Commission to expand access to broadband to households across the state.

II. Background

Santa Clara County has a population of approximately 1.95 million residents living within approximately 1,312 square miles of land.¹ It is one of the most populous counties in the state, and the most populous county in Northern California, making up about one fourth of the Bay Area’s total population.² It consists of both densely populated urban areas, such as the City of San José, and sparsely populated rural areas, such as the Coyote Valley.

While Santa Clara County is widely known as the heart of Silicon Valley, there are stark disparities in access to broadband internet across the county. For example, almost 100,000

¹ California Department of Finance, *E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change — January 1, 2020 and 2021* (May 2021), <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/>.

² *Id.*

people in Santa Clara County do not have access to the internet. Almost 130,000 more individuals have access only through a cellular data plan.³

The high cost of broadband deployment in certain areas outside of the county's urban core is a significant barrier to connecting many communities in Santa Clara County. This challenge is particularly acute in rural communities south of San José, and in communities in the Santa Cruz Mountains. Construction of a State-owned open access middle mile network is an important step in providing broadband access to unserved and underserved residents throughout the county.

III. Discussion

A. Existing Middle Mile Infrastructure

1. Proposed Fiber Highway Routes

The County believes that the proposed anchor fiber highway routes in the Ruling will substantially improve broadband access for its residents. The County would like to emphasize its support for, and provide further comment on, the proposed fiber highway segments running from San José through Gilroy, from Gilroy to Hollister, and from San José to Santa Cruz. In addition to these comments, we encourage the Commission to consult with local agencies in planning routes through their jurisdictions.

i. San José-Gilroy Segment

The County is particularly supportive of the proposed line through South County from San José through Gilroy to Santa Cruz County, currently proposed along Highway 101. This region includes many of the most densely populated California Advanced Services Fund (CASF) eligible census tracts in Santa Clara County.⁴ Serving this area is difficult for existing providers due to the hilly terrain of the Coyote Valley foothills and the low population density in these more rural communities. Constructing a middle mile network through this region could substantially lower the cost of providing service to households in this region.

While there is a substantial amount of existing fiber traversing South County, a State-owned route through South County would significantly benefit this region. Much of the existing

³ U.S. Census Bureau, 2019 American Community Survey (2020). There are 32,753 households with no internet access, and 43,756 households who have a cellular data plan, and no other type of internet subscription. Table B28002 Presence and Types of Internet Subscriptions in Household, Santa Clara County, California. The average household size is 2.94 persons. Table S1101 Households and Families, Santa Clara County, California.

⁴ Cal. Public Utilities Commission, California Interactive Broadband Map (EOY 2019 Map, 2020), "CASF Infrastructure Eligible Areas," "Density of Eligible Housing Units per Sq. Mi.," <https://www.broadbandmap.ca.gov/>.

fiber that runs through South County is not middle mile fiber, but long haul fiber; accordingly, it is largely unavailable for use to provide last mile connections to local households. Little of the existing middle mile fiber is open access. While there is some availability for local providers, it is limited and unaffordable. We understand annual rates often exceed \$300 per strand per mile. The lack of access to affordable middle mile fiber increases the cost to providers to connect households in this region.

Construction of a State-owned fiber highway along Highway 101 is also an opportunity to address the lack of redundancy in the existing networks across South County. Much of the existing fiber runs along a single route, the railroad right-of-way adjacent to Monterey Road. This lack of redundancy makes the existing networks vulnerable to large scale failures. For example, on February 3, 2021, much of the City of Morgan Hill, which has a population of over 47,000 people, lost internet access and cell service, reportedly due to a contractor accidentally severing a fiber line at a construction site.⁵ The approximately twelve-hour outage impacted 911 calls, halted distance learning in schools, and cost businesses thousands of dollars. This outage is only the most recent in a series of similar incidents caused by a variety of sources ranging from vandals to auto accidents.⁶ Adding redundancy to this network would allow providers to maintain service when any single point fails.

The State's middle mile network can provide critical redundancy in the region's existing broadband infrastructure. This additional line would lower the chances that an incident disrupting fiber along Monterey Road would disrupt service to the region and provide additional options to service structures farther from Monterey Road. There are also multiple County roads

⁵ Marianne Favro, *Internet Outage in Morgan Hill Impacts 911 Calls, Schools, Businesses*, NBC Bay Area (Feb. 3, 2021), <https://www.nbcbayarea.com/news/local/south-bay/internet-outage-in-morgan-hill-impacts-911-calls-schools-businesses/2458577/>; Michael Moore, *State Investigates Feb. 3 Internet Outage*, Morgan Hill Times (March 3, 2021), <https://morganhilltimes.com/state-investigates-feb-3-internet-outage/>. *E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change — January 1, 2020 and 2021*, State of California Department of Finance (May 2021), <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/>.

⁶ See e.g., Mark Gomez and Mike Swift, *Phone Service Fully Restored; AT&T Offers 100K Reward*, Mercury News (April 10, 2009), <https://www.mercurynews.com/2009/04/10/phone-service-fully-restored-att-offers-100k-reward/>; Morgan Hill Times Staff, *Verizon Fiber Optic Cable Cut Causing Phone, Internet Outage*, Morgan Hill Times (March 5, 2012), <https://morganhilltimes.com/update-verizon-fiber-optic-cable-cut-causing-phone-internet-outage/>; Michael Moore, *AT&T offers \$250,000 Reward for SJ Fiber Optic Line Vandalism*, Morgan Hill Times (Apr. 17, 2013), <https://morganhilltimes.com/att-offers-250000-reward-for-sj-fiber-optic-line-vandalism/>; Morgan Hill Times Staff, *Sources: Traffic Accident Caused Internet Outage*, Morgan Hill Times (Aug. 9, 2019), <https://morganhilltimes.com/sources-traffic-accident-caused-internet-outage/>.

in the area running parallel to Highway 101 that are closer to unserved households.⁷ The County would be pleased to discuss the use of these rights-of-way with the State for the deployment of the middle mile network.

There are smaller segments of existing conduit in this region that could be available for use as part of the State's network. While not sufficient to replace the proposed route, use of these existing segments could reduce costs for the State in constructing its middle mile network. The County would be willing to work with the State to identify segments and providers that could be appropriate for this purpose.

ii. Gilroy – Hollister Segment

The County is supportive of a segment connecting Gilroy and Hollister, currently proposed along Highway 25. However, rather than the Commission's proposed route along Highway 25, we suggest building along Highway 152 to Highway 156. Both highways run through numerous CASF eligible census tracts, though the tracts along Highway 152 and 156 are more densely populated.⁸ A fiber highway constructed along this route would benefit a greater number of households.

iii. San José – Santa Cruz Segment

The County is also supportive of the proposed line from San José to Santa Cruz, currently proposed along Highway 17. This area also includes numerous densely populated CASF eligible census tracts.⁹ The Santa Cruz Mountains make this area difficult for existing providers to service, a challenge that is exacerbated by the region's low population density. Ensuring that open access middle mile fiber is available in this region is crucial to providing broadband access to these households.

While there is currently an open access line along Highway 17, further action is necessary to ensure affordable access to middle mile fiber in this region. We understand that some providers are paying more than \$650 per mile per year for access to middle mile fiber, which significantly reduces their ability to reach unserved households. There are multiple ways to ensure affordable access to middle mile fiber in this region. Construction of a State-owned

⁷ See County of Santa Clara, Santa Clara County Roads & Airports CL Out Data, <https://sccgov.maps.arcgis.com/apps/Viewer/index.html?appid=33dc60fbd4594419b3f455ea70ee2ca4>. County rights-of-way are marked in blue.

⁸ Cal. Public Utilities Commission, California Interactive Broadband Map (EOY 2019 Map, 2020), "CASF Infrastructure Eligible Areas," "Density of Eligible Housing Units per Sq. Mi.," <https://www.broadbandmap.ca.gov/>.

⁹ *Id.*

line would ensure affordability by providing competition to the existing operator. An alternative means of ensuring affordable access to middle mile fiber is to secure a commitment from an existing provider to provide access on terms comparable to what the State would have offered. While a State-owned network provides a more durable solution to securing affordable middle mile fiber, securing pricing commitments from existing open access providers could allow the State to extend its limited resources further.

Construction of a fiber highway in this region is also an opportunity to improve redundancy. The County maintains a road network in the Santa Cruz Mountains that runs parallel to Highway 17 and the existing fiber line stretches that could be available for this system.¹⁰ The County would be pleased to discuss the use of these rights-of-way with the State for the deployment of the middle mile network.

2. Sufficient Capacity and Affordable Rates

The County recommends a very high strand count for this network, to ensure its utility long into the future. The cost of building capacity during construction is negligible whereas adding additional strands once the network is up and running may be cost-prohibitive. Accordingly, we recommend the State install at least 288 strands of dark fiber across all regions.

We consider affordable rates to be approximately \$1,000 or lower per strand per mile, plus the State's operational and maintenance costs, for a 20-year indefeasible right of use. Some variation may be appropriate to account for factors like higher costs of service.

Variation based on cost to service end users may also be appropriate. High cost areas often overlap with low income populations for whom service cost are a significant barrier to internet access.¹¹ In order to make providing last mile servicing these households feasible, the State should offer subsidies or discounts on its middle mile fiber rates to last mile providers serving underserved low-income areas.

3. Verification of Pricing and Availability Claims from Existing Providers

Requesting term sheets and rates from existing providers claiming to have affordable existing routes is an effective means to verify if providers are actually providing service at their

¹⁰ See County of Santa Clara, Santa Clara County Roads & Airports CL Out Data, <https://sccgov.maps.arcgis.com/apps/Viewer/index.html?appid=33dc60fbd4594419b3f455ea70ee2ca4>. County rights of way are marked in blue.

¹¹ See e.g., City of San Jose, Digital Inclusion Strategy Report (Nov. 2017), p. 10, http://sanjose.granicus.com/MetaViewer.php?view_id=&event_id=2798&meta_id=686002 (noting that service cost is the top barrier to internet access at home).

claimed rates. The Communications Division of the Commission should request rate sheets with explicitly detailed costs for dark fiber leasing service (not lit fiber) with set costs for a specified period and make these rate sheets publicly available. The Commission should impose penalties on providers for failing to deliver service within a set timeframe at the promised price. Since dark fiber assets increase in value over time, there is no need to lock in rates for a full twenty years, but rates should remain the same for a set number of years.

B. Priority Routes

The County generally concurs with the Commission's assumption that areas with disproportionately high numbers of unserved households will be areas with insufficient middle mile network access. However, conducting this analysis at a county level, as suggested in the Ruling, would obscure disparities within counties. Santa Clara County is an instructive example. While the more urbanized northern portions of the County have high numbers of households with good connections and does not need high prioritization for additional middle mile infrastructure, the more rural southern portions of the County have much lower levels of internet access, warranting higher prioritization for additional middle mile infrastructure.¹²

The State should also prioritize areas where the cost of last mile infrastructure is high. Even in regions where overall adoption rates are high, challenging geography and low population density can make reaching the last remaining unconnected pockets difficult. For example, the City of Morgan Hill is densely populated and has relatively high rates of service.¹³ However, portions of the unincorporated County immediately outside of the city are more sparsely populated and on hilly terrain which increases costs of service. These areas are likely to benefit more from the cost reductions that come from State construction of affordable middle mile infrastructure.

The Commission should also prioritize areas where there are providers ready and willing to construct last mile connections. Doing so will ensure that the middle mile network provides service to the most households as soon as possible. The Commission should obtain commitments from these companies prior to building to ensure that they will leverage the new infrastructure as soon as it is available.

¹² Cal. Public Utilities Commission, California Interactive Broadband Map (EOY 2019 Map, 2020), "Wireline Served Status," "Wireless Served Status," <https://www.broadbandmap.ca.gov/>.

¹³ *Id.*

C. Affordability of Middle Mile Infrastructure

Determining appropriate and affordable rates is essential to maximizing the benefit from the middle mile network. Rather than basing rates for the State's network on the rates charged or paid by current middle mile providers, the State should consider what last mile providers and end users can afford to pay for service.

Existing providers establish rates based on their potential return on investment (ROI). In contrast, the main purpose of the State's network is to cover the areas that do not present a solid business case at current competitive rates. If there were a compelling ROI for many of these areas for middle mile fiber, existing companies would have already built out in these areas. Input from primary customers of this network (i.e., internet service providers and cellular providers) is vital to determine if the proposed pricing would sufficiently incentivize them to build last mile projects leveraging this infrastructure. In general, varying the cost of middle mile service depending on the location where service is provided is reasonable.

The Commission should also consider affordability to end users in determining reasonable rates. Service cost is a significant barrier to internet access.¹⁴ In order to make servicing these households feasible, the State should offer subsidies or discounts to last mile providers for serving underserved low-income areas.

D. Leasing Existing Infrastructure

The best solution for ensuring affordable access to middle mile broadband infrastructure is construction of a State-owned network. As previously discussed, even where there is existing fiber, the presence of State-owned lines provides critical redundancy, ensures commercially viable rates, fosters competition, and can make reaching hard to serve households more feasible. Nevertheless, the County recognizes that relying on indefeasible rights of use on existing lines in some cases could allow the State to focus its limited resources on the areas of highest need. The County encourages the Commission to consult with local communities, public agencies, and providers in determining where purchasing indefeasible rights of use is appropriate.

¹⁴ See e.g., City of San Jose, Digital Inclusion Strategy Report (Nov. 2017), p. 10, http://sanjose.granicus.com/MetaViewer.php?view_id=&event_id=2798&meta_id=686002 (noting that service cost is the top barrier to internet access at home).

E. Interconnection

The statewide network will need to connect with other networks to deliver services. Ideal interconnections are carrier-neutral data centers with redundant power and cooling facilities. Some examples are Equinix SV8 Palo Alto Data Center at 529 Bryant Street in the City of Palo Alto, and Lumen Sunnyvale 2 at 1380 Kifer Road in Sunnyvale, and South Valley Internet, which maintains data centers in San Martin. Another option is contracting with collocation vendors or other large institutions for use of their facilities.

Additional exchange points will almost certainly be advantageous in designing the middle mile network. In selecting these exchange points, the standardization of fiber layouts to the hub and central sites needs to be considered to streamline infrastructure standards. Additional regeneration or interconnect nodes will be required, likely in the form of fiber huts, which may include prebuilt towers for wireless internet service providers.

F. Network Route Capacity

In constructing the network, the County recommends the Commission include as many strands as possible. As previously noted, we recommend no less than 288 strands of dark fiber across all regions. The County also supports adding secondary and even tertiary conduit as standard on all underground paths, both for future use as well as rapid repair and for replacement of damaged segments.

In determining the appropriate capacity for its network, the Commission should consider physical space at the middle mile termination point, as additional space at each interconnect location is required for the physical equipment. Other important factors are the existing conduit capacity and the cost of adding new conduits.

IV. Conclusion

The County appreciates the opportunity to provide input into the State's planning process for the middle mile network. As delivering this project will require detailed knowledge of existing infrastructure, assets, and communities, ongoing collaboration with local agencies, providers, and community-based organizations will be crucial to its success. We believe Santa Clara County's strong network of providers, advocates, and public agencies, its acute needs, and its history of innovation would make the county an excellent pilot project for developing models for partnerships that can be replicated statewide. We look forward to the Commission's final

decision on the Ruling and support the Commission's efforts to move towards the provision of affordable and reliable internet services.

Respectfully submitted September 3, 2021, at San Jose, California.

COUNTY OF SANTA CLARA

/s/  1039796C97FC41D...

Imre Kabai, Chief Information Officer,
County of Santa Clara Technology Services and Solutions Department

150 W. Tasman Drive
San Jose, CA, 95134
Telephone: (408) 918-7127
Email: imre.kabai@isd.sccgov.org

/s/  163B7BB7398A4B8...

James R. Williams, County Counsel
Jerett T. Yan, Deputy County Counsel

70 W. Hedding Street, 9th Floor
San José, CA 95110
Telephone: (408) 299-5900
Facsimile: (408) 292-7240
E-mail: jerett.yan@cco.sccgov.org